

WHAT IS CLAIMED IS:

1. A composition comprising a substantially pure histidine-rich glycoprotein polypeptide and an anti-angiogenic agent.
2. The composition of claim 1, wherein said anti-angiogenic agent is selected from the group consisting of angiostatin, thrombostatin, endostatin, interferon- α , interferon-inducible factor 10, platelet factor 4, and a COX-2 inhibitor.
3. The composition of claim 1, further comprising a pharmaceutical carrier acceptable for administration to a mammal.
4. The composition of claim 1, wherein said polypeptide is an HRGP fragment.
5. The composition of claim 4, wherein said fragment comprises the amino terminal domain of intact HRGP.
6. The composition of claim 4, wherein said fragment comprises the central domain of intact HRGP.
7. The composition of claim 4, wherein said fragment comprises the C-terminal domain of intact HRGP.
8. The composition of claim 4, wherein said fragment comprises at least one tandem repeat of the pentapeptide [H/P]-[H/P]PHG.
9. A composition comprising a substantially pure histidine-rich glycoprotein polypeptide and an anti-neoplastic agent.
10. The composition of claim 9, further comprising an anti-angiogenic agent.

11. The composition of claim 9, wherein said anti-neoplastic agent is selected from the group consisting of taxol, cyclophosphamide, carboplatinum, cisplatin, cisplatin, gancyclovir, camptothecin, paclitaxel, hydroxyurea, 5-azacytidine, 5-aza-2'-deoxycytidine, and suramin.
12. The composition of claim 9, further comprising a pharmaceutical carrier acceptable for administration to a mammal.
13. The composition of claim 9, wherein said polypeptide is an HRGP fragment.
14. An article of manufacture comprising packaging material and a substantially pure histidine-rich glycoprotein polypeptide within said packaging material, wherein said packaging material comprises a label or package insert indicating said polypeptide is to be administered to a mammal for the inhibition of angiogenesis.
15. A method for inhibiting angiogenesis in a mammal, comprising administering a composition comprising a substantially pure histidine-rich glycoprotein polypeptide to said mammal, wherein angiogenesis is inhibited in said mammal.
16. The method of claim 15, wherein said mammal has cancer.
17. The method of claim 15, wherein said mammal has a condition selected from the group consisting of myocardial angiogenesis, diabetic retinopathy, diabetic neovascularization, inappropriate wound healing, and an inflammatory disease.
18. The method of claim 15, wherein said mammal is a mouse.
19. The method of claim 15, wherein said mammal is a rat.
20. The method of claim 15, wherein said mammal is a human.

21. The method of claim 15, said composition further comprising a pharmaceutical carrier acceptable for administration to a mammal.
22. The method of claim 15, wherein said polypeptide is an HRGP fragment.
23. The method of claim 15, said composition further comprising an anti-angiogenic agent.
24. The method of claim 23, wherein said anti-angiogenic agent is selected from the group consisting of angiostatin, thrombostatin, endostatin, interferon- α , interferon-inducible factor 10, platelet factor 4, and a COX-2 inhibitor.
25. The method of claim 23, said composition further comprising a pharmaceutical carrier acceptable for administration to a mammal.
26. The method of claim 23, wherein said polypeptide is an HRGP fragment.
27. The method of claim 15, said composition further comprising an anti-neoplastic agent.
28. The method of claim 27, wherein said anti-neoplastic agent is selected from the group consisting of taxol, cyclophosphamide, carboplatinum, cisplatin, cisplatin, gancyclovir, camptothecin, paclitaxel, hydroxyurea, 5-azacytidine, 5-aza-2'-deoxycytidine, and suramin.
29. The method of claim 27, further comprising a pharmaceutical carrier acceptable for administration to a mammal.
30. The method of claim 27, wherein said polypeptide is an HRGP fragment.
31. A method for identifying an anti-angiogenic polypeptide, comprising:

measuring the effect of an HRGP polypeptide upon FGF-2 induced migration of primary bovine adrenal cortex capillary endothelial cells; and

identifying said HRGP polypeptide as an anti-angiogenic polypeptide when said FGF-2 induced migration is significantly decreased in the presence of said HRGP polypeptide.

32. The method of claim 31, wherein said HRGP polypeptide is an HRGP fragment.

33. A method for identifying an anti-angiogenic polypeptide, comprising:
measuring the effect of an HRGP polypeptide upon chick chorioallantoic membrane angiogenesis; and

identifying said HRGP polypeptide as an anti-angiogenic polypeptide when said chick chorioallantoic membrane angiogenesis is significantly decreased in the presence of said HRGP polypeptide.

34. The method of claim 33, wherein said HRGP polypeptide is an HRGP fragment.

35. A method for identifying an anti-angiogenic polypeptide, comprising:
measuring the effect of an HRGP polypeptide upon growth of an angiogenesis-dependent tumor; and

identifying said HRGP polypeptide as an anti-angiogenic polypeptide when said tumor growth is significantly decreased in the presence of said HRGP polypeptide.

36. The method of claim 35, wherein said HRGP polypeptide is an HRGP fragment.

37. An antibody that binds to a histidine-rich glycoprotein polypeptide.

38. The antibody of claim 37, wherein said antibody neutralizes the ability of said polypeptide to inhibit angiogenesis.

39. The antibody of claim 37, wherein said antibody is agonistic for angiogenesis.

40. The antibody of claim 37, wherein said antibody is antagonistic for angiogenesis.
41. A method for the inhibition of angiogenesis in a mammal, comprising administering the antibody of claim 39 to said mammal.
42. A method for stimulating angiogenesis in a mammal, comprising administering the antibody of claim 40 to said mammal.
43. A method of birth control, comprising administering a substantially pure histidine-rich glycoprotein polypeptide to a female mammal.
44. A method of imaging neovascularization in a mammal, comprising; administering a substantially pure histidine-rich glycoprotein polypeptide coupled to a detectable marker to said mammal; measuring neovascularization in said mammal based on said detectable marker.
45. A substantially pure histidine-rich glycoprotein polypeptide coupled to a detectable marker.
46. A substantially pure histidine-rich glycoprotein polypeptide coupled to a toxin.
47. A substantially pure receptor that binds to a histidine-rich glycoprotein polypeptide.
48. Plasma depleted of histidine-rich glycoprotein.
49. The plasma of claim 48, wherein said plasma is human plasma.
50. An isolated polynucleotide encoding an HRGP polypeptide fragment.